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Exports Fuel Growth Of Central America's Beef Production

By Monika Metrinko

Central American[1] livestock production and exports have climbed rapidly since the early 1970's, a situation likely to continue for at least the next 5 years.

Beef and veal production in Central America is forecast to jump 10 percent in 1978 over last year's level to 426,000 metric tons. Cattle slaughter is also likely to be higher—up 9 percent to 2.3 million head. These increases are the result of continuous buildup in cattle inventories over the past few years.

These sharp 1-year gains are representative of the increases in cattle numbers, slaughter, and meat production Central America has been experiencing for the past 8 years or so.

Between January 1, 1970 and January 1, 1978, cattle numbers rose from 10.2 million head to 14.4 million. Slaughter levels have risen by 46 percent in that time period and meat production was up 50 percent over the 1970 figure.

[1] *The Dominican Republic, Haiti, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.*

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This is in sharp contrast with the situation in other major producing countries of the world—the United States, Canada, Australia, and New Zealand—where rapidly increased beef output, particularly in 1976–77, was the result of declines in national cattle herds.

The continued expansion in Central American livestock industries is attributed not only to increased export demand, but also to improvement of breeding stock through imports of purebred animals, better calving percentages, higher average slaughter weights, and better infrastructural facilities.

Recognizing the value of the beef industry to their economies, the governments of these countries have provided incentives such as good credit terms to cattlemen, higher prices for cattle on-the-hoof, agrarian reform that turns more pastures over to cattle production, and development of new areas (such as those in Guatemala and Nicaragua) for cattle grazing.

The cattle cycle of Central America is also much different from that of major producers. For example, in times of low prices in the United States (such as in 1974–77) or drought, U.S. cattlemen tend to increase marketings.

In Central American countries, producers faced with low prices or drought tend to hold cattle back from the market until better prices develop or, in the case of drought, until pasture conditions improve enough to put weight back on the cattle.

Central American cattle slaughter is seasonal, unlike that in the United States. Weather plays an important role in the production of Central American beef. The dry season usually occurs in the first 6 months of the year and is followed by 6 months of a rainy season. Cattlemen hold their grass-fed animals on pastures until the rainy season is almost over so that weight gains are maximized before marketing.

Higher beef production in recent years has been given impetus by greater demand for exports. Increased domestic incomes have also played a role in expanding domestic consumption, but it appears that foreign demand, particularly from the United States, has provided greater stimulus. This is particularly applicable in Costa Rica, Guatemala, Honduras, and Nicaragua, where exports in 1977 accounted for over 50 percent of annual beef production.

The United States continues to be the traditional market for beef exports from Central American countries, although these nations account for only about 16 percent of U.S. imports.

In past years, these countries have agreed to participate in bilateral agreements that limit their exports to the United States. This year, such agreements are in effect to limit U.S. imports from the area to 113,581 tons, product weight.

As of July 1, imports from Central American countries amounted to 48,803 tons—5 percent less than last year's level at that point in the year. The drop in imports is attributed to several factors: To date, Belize and the Dominican Republic have not exported any meat subject to the U.S. meat import program for the current year; Costa Rica and Panama are running behind the July 1, 1977 level by about 27 percent and 82 percent, respectively; and none of the Central American countries started with carryover stocks in bonded warehouses.

Imports of fresh, chilled and frozen beef and veal are expected to pick up in the latter part of the year when heavier seasonal slaughter occurs. Total beef and veal exports to all destinations from Central America are forecast at 149,000 tons (carcass weight) for 1978—17 percent greater than last year's.

Lower U.S. beef prices in 1976/77 and voluntary restraints on exports to the United States caused some of the Central American producers to ship to other markets, particularly in Venezuela and the Middle East. With higher U.S. beef prices in 1978, Central American countries are expected to export their product solely to the United States.

As of July 12, 1978, the price for U.S. imported boneless cow meat was $0.88 per pound, compared with $0.67 a year earlier. With these attractive prices for imported beef, most Central American cattlemen are expected to gear up to export large quantities of beef when the traditional seasonal slaughter period starts in the fall.

A review of the situation in some of the producing

countries follows:

Costa Rica. Beef exports rank as the third largest earner of foreign exchange in this country. Since the early 1960's, the major traditional export market has been the United States. In earlier years, Costa Rica attempted to develop new markets (outside the United States); however, those efforts have been only partially successful.

Costa Rican exports of beef have increased 61 percent during 1970–78, reaching an estimated 41,327 tons this year. Although most of Costa Rica's exports have been to the United States, in 1977, over 51 percent of the country's shipment went to Venezuela and the Middle East (9,300 tons and 932 tons, respectively).

This year, Costa Rican beef exports subject to the U.S. Meat Import Law are set at 29,575 tons. Some 1,630 tons are also expected to be shipped to Israel.

Two new markets—South Korea and Cuba—have opened for Costa Rican boneless beef. The South Koreans have purchased about 113 tons. A contract also has been concluded with the Cuban Government for 900 tons of boneless beef for August delivery.

Costa Rican cattle inventories have jumped 34 percent in 8 years to an estimated 2.01 million head in 1978. Slaughter and production have also risen substantially to 314,000 head and 69,080 tons, respectively, this year. About 60 percent of this production is for export, the remainder is for domestic consumption.

Approximately 95 percent of the 1978 cattle inventory is of beef animals; the remainder is essentially of dairy-type. Although Criollo-type cattle can still be found in the country, Costa Rica has made more progress than any other Central American country in improving livestock herds through upgrading with purebred animals.

Most of Costa Rica's beef cattle are concentrated in the Pacific provinces: dairy animals are located in the central plateau provinces. Costa Rica is believed to have more medium- and large-size ranches (150-500 head and over 500 head, respectively,) than do other Central America producers.

The Caribbean side of Costa Rica holds potential for a substantial increase in beef production. Costa Rica's plan is to eventually use the improved pastures on the Caribbean side of the country—when they are established—to feed out feeder stock purchased in the Pacific areas during the dry season. Because of the longer rainy season, pasture conditions on the Caribbean side are better throughout the year.

Honduras. This country's livestock industry differs from that of other Central American producers in its unofficial trade of live feeder cattle. Live cattle are shipped annually to Guatemala, Costa Rica, and El Salvador, where Honduran cattlemen can get as much as 10 cents more per pound for cattle on-the-hoof than they can get in their own country.

The Honduran cattle population has increased 8 percent in the last 8 years to an estimated 1.7 million head this year. Most of the cattle are scattered throughout the countryside, with the primary concentration in the southern part of Honduras. The majority of the cattle are Criollo-type. Like most of the Central American countries, Honduras has made an effort to import purebred animals to improve its own breeds. About three-fourths of the cattle are on farms of about 100-500 head.

For 1978, beef and veal production is forecast to increase 6 percent over the 1977 total to 46,036 tons. Of this amount, 45 percent is slated for export. Virtually all of Honduras' beef and veal exports are shipped to the United States.

Guatemala. This country, which is similar in geography to Honduras, has quite a different meat marketing system. Basically there are four markets—export, controlled domestic, wholesale (hotels and restaurants), and the carriage trade (uncontrolled prices).

When the export market is down in Guatemala, the controlled market holds steady, while the wholesale and carriage trade sectors boom. This setup provides impetus for increased production.

Since 1970, Guatemala's cattle population has grown 67 percent to an estimated 2.41 million head as of January 1, 1978. Beef and veal production during this period has jumped 52 percent to 87,013 tons, mostly as a result of heavier slaughter weights.

Of the estimated 1978 beef production, some 26 percent will be for export, primarily to the United States, imports from Guatemala are currently set at 18,960 tons under the U.S. Meat Import Law.

Guatemala's domestic consumption of beef has risen from a low level of 40,138 tons in 1970 to an estimated 69,033 tons this year, representing an increase of 72 percent. As a result of the 1975 earthquake, the number of jobs available in Guatemala surged, primarily in construction. With better jobs and incomes, Guatemalans began to consume more beef. In order to maintain export levels and still satisfy consumer demand, Guatemala imports live cattle from Honduras. The size of this trade varies with differences in cattle prices and pasture conditions in Guatemala compared with those in Honduras.

As in Costa Rica, most of the beef cattle are distributed in the Pacific coastal areas, with some cattle also scattered near the borders of El Salvador and Honduras. In the north coastal region, some land has been cleared for pasture, and cattle ranching has been started. And, as in both Costa Rica and Nicaragua, the tendency is to move cattle from one part of the country to another, usually to areas with better pasture conditions. Most of the cattle in Guatemala are still predominantly Criollo-type, but the country has been importing purebred animals to improve domestic herds.

Dominican Republic. Production of beef and veal in the Dominican Republic is expected to increase 14 percent over last year's figure to 40,700 tons. This projected gain would ordinarily provide greater supplies of beef for export. However, the export picture has been clouded by a beef export ban that has been in effect for over a year.

In order to assure enough beef for the domestic market, exports were banned until after national elections. The elections have taken place, but exports to the United States have not resumed thus far. Even if the ban were lifted, the most the Dominican Republic could ship in calendar, 1978 would be about 3,500 tons.

The Dominican Republic's cattle population has risen 90 percent since 1970 to an estimated 2.1 million on January 1, 1978. □

'Tailored' Food Items Have Bright Outlook In Japanese Market

Exports of U.S. farm commodities to Japan in 1977 totaled about $3.9 billion, making it the world's largest market for such products. In 1978, U.S. agricultural exports to Japan are expected to top this figure. But there are still notable opportunities to increase these exports—especially of processed and ready-to-eat foods.

In a recent interview, Phillip C. Holloway, Assistant U.S. Agricultural Attaché in Tokyo, called "particularly bright" prospects for small processors willing to tailor their products to the specific requirements of the Japanese market or those with a unique item, especially in the snack line.

"About 90 percent of the commodities shipped to Japan in 1977 were bulk products, and it is probably safe to say most U.S. promotion activities took place in these areas. However, stronger market promotion of prepared foods would probably boost their 10 percent market share of all farm exports to Japan to a much higher level. Products having a potential for greater sales are choice and prime beef, pork, poultry products, frozen and canned vegetables, and snack items," he said.

Holloway believes that U.S. promotional activity in Japan is as intense as in any other country in the world—if not more so. "USDA has 30 cooperator projects in Japan. Eleven cooperators have offices in Japan, five with American resident directors, the rest with Japanese directors," he said.

"In the past two decades, we have seen phenomenal growth in the use of all the commodities represented by these cooperators, especially in the consumption of wheat, feedgrains, soybean meal, and soy protein. I believe that the U.S. cooperators who work closely with the various Japanese industries and Japanese Government officials have contributed to these increases," he noted.

He also stated that in addition to the direct promotion being done by U.S. cooperators, certain third-party cooperators have promotion programs of their own.

Third-party cooperators are Japanese groups having an economic interest in boosting sales of U.S. agricultural products. "We work through the Japanese Oilseed Processors Association, for instance, to promote the use of soybeans and meal, thereby indirectly promoting sales of U.S. soybeans.

"The Attaché's office also works with Cotton Council International and the Japan Cotton Promotion Institute to promote the sales of Japanese textiles made from U.S. cotton, and with the Corn Starch Association, the Japan Feed Council, and certain feed manufacturers to promote larger imports of grain and feedgrains, especially corn," Holloway said.

As an example of a successful bulk commodity promotion program, Holloway cited the feeding scheme of the U.S. Feed Grains Council, a program designed to help Japanese cattlemen get the most from every kilogram of feed. In one of these, USFGC has reduced feeding time for Holstein steers (for beef) from 25 months to 17-18 months. The result has been a reduced cost per unit of weight gained, and a jump in the amount of U.S. corn and other grains used in the rations.

On the processed food side, Holloway said, "there has been a sizable growth in consumption of canned cling peaches through the efforts of the California Cling Peach Advisory Board." And, he emphasized, there are other, similar success stories that can be told about bulk or processed food cooperators.

"The five U.S. cooperators having American directors in Japan are the American Soybean Association, the U.S. Feed Grains Council, Wheat Associates, the National Renderers Association, and the U.S. Meat Export Federation.

"Some of the cooperators with Japanese staffs are the Poultry and Egg Institute of America (PEIA), the California Almond Growers Exchange, the U.S. Dry Pea and Lentil Council, the California Cling Peach Advisory Board, and the California Avocado Advisory Board," Holloway declared.

"In addition, there are groups like the Pacific Coast Pear Service promoting U.S. canned pears, as well as a number of State Departments of Argiculture promoting local products. Among these are the Oregon Department, which has promoted canned berries from that State, and Departments from the States of Oregon, Idaho, and Washington, active promoters of frozen french fries.

"Promotion of still other products," Holloway said, "is handled through the facilities of the U.S. Agricultural Attaché's Office—working with the Foreign Agricultural Service in Washington, D.C.—through USDA food shows and in-store promotions with major department stores and supermarkets.

"The major promotional activities to be sponsored by the Agricultural Attaché's Office in Tokyo this year and next included a red meat, poultry, and fish exhibit at the U.S. Trade Center, September 12-14.

"From October 15-19, the Attaché's Office and FAS will sponsor a Japanese food buyers' mission to the United States. Regional/State agricultural product promotional groups will organize exhibits to expose members of the mission to the widest possible line of U.S. products in which they are interested (see page 12).

"Then in March 1979, the Attaché's Office will participate in the International Hotel and Restaurant Show at Harumi Pier in Tokyo. We expect to have 60 exhibitors at the show and

By Marcellus P. Murphy, staff writer, *Foreign Agriculture*.

will display the entire range of U.S. processed agricultural products."

One element in Japan's upsurge as a purchaser of U.S. prepared foods is its developing appetite for fast food, especially hamburgers, pizzas, and fried chicken, according to Holloway. "A visitor to Tokyo can go almost anywhere in the city and find an outlet selling hamburgers, Kentucky fried chicken, doughnuts, or pizza.

"There is one U.S. hamburger chain with 100 outlets in Tokyo and one with 160 outlets selling fried chicken. Also, there are a number of fast-food restaurants selling Western-type dishes composed of raw materials imported from the United States. The pizza chain, for example, uses U.S. mozzarella cheese, salami, and other processed meat toppings from the United States, and mostly U.S. wheat for its crust."

Another element is Japan's high standard of living, which makes it possible for consumers to eat away from home periodically. Holloway pointed out that Japan is the second richest nation in the free world with a gross national product (GNP) of approximately $680 billion, equal to one third the U.S. GNP of $1.9 trillion. Its growing population—now standing at 113 million—is about half that of the United States.

"As a consequence of these increases, within the past 20 years we've seen the introduction into Japan of many processed products," Holloway said. "Among these are cranberry juice, raisins, different types of products made from soybeans, protein foods, and snack foods—especially potato snacks made from U.S. dehydrated potatoes. Sales of raisins—introduced early in the game—have seen large increases both because of their acceptance as a snack food and their growing use by the baking and confectionery industries."

Demonstration kitchen at U.S. food exhibit in Japan provides visitors an opportunity to become acquainted with U.S. food items.

It is safe to say that nearly any U.S. exporter with a product new to the Japanese market will probably have some success, Holloway noted. Examples of such products are Pop Rocks, a U.S. candy; Soybean Brew, a coffee substitute manufactured in Iowa; and chicken hot dogs.

"Chicken hot dogs can be cited as a U.S. product that has met the unique demands of the Japanese market and has developed into a red-hot seller on the streets of Tokyo. The exporter, aided by the office of the U.S. Agricultural Attaché and the Tokyo office of PEIA, met with Japanese importers and interested one of them in importing his product. These hot dogs proved to be low in cost, nutritious, and of much better quality than the indifferent domestic product.

"The result is that a small Japanese trading company now imports about 12 containerloads of chicken hot dogs a year—selling them from street carts. This is not a big operation, but it is growing, and indicates what a U.S. businessman can achieve in the Japanese market.

"But most small-scale businessmen are unwilling to make the necessary adjustments to fit their products to the requirements of the Japanese market, Holloway noted. They often believe that a product labeled in English to meet the requirements of the U.S. market, giving weights in pounds and ounces, and containing additives, will sell as well in Japan as in the United States," he said.

"This is not the case, however, since Japanese labeling and additive requirements are very stringent. Firms wishing to sell in Japan must be willing to match their products to Japanese specifications."

FAS, acting through the Tokyo Attaché's Office, has a number of services available to enable U.S. food processors to determine whether it is worthwhile to adjust their products to meet Japanese standards and to help them assess their chances of success after making such adjustments.

The processor can, for example, submit his product label to FAS, which will send it to the Attaché in Tokyo. The Attaché's Office will clear these labels with the Ministry of Health and Welfare, the agency charged with approving imports of foods into Japan. After receiving a clearance (or rejection) the Attaché informs Washington and, if required, makes recommendations on changes that will make a rejected product acceptable.

Should the processor wish to come to Japan to discuss his product with Japanese officials, or with officials of trading companies interested in handling

(Continued on page 12)

Ivory Coast To Expand Poultry Industry

By Kenneth L. Murray

The Ivory Coast's commercial poultry industry, which until recently consisted of a relatively few small broiler and egg operations near Abidjan, has embarked upon a $10-million expansion program projected to produce about 2.1 million broilers and 45 million eggs annually by 1980.

The program, backed jointly by the Ivoirian Government (33 percent), Ivoirian banks (16 percent, and French investors (51 percent), calls for establishment of 180 commercial poultry enterprises with up to 20,000 birds on each site. Some farms will specialize in broiler production, others in egg output.

Of the $10 million investment, about $5.5 million is for construction of a feedmill, slaughter plant, hatchery, and a number of breeding farms. The remaining $4.5 million is for the 180 broiler and layer units.

The feedmill's annual capacity is planned at 27,000 tons by 1980—double the country's present annual mixed-feed production. The breeding farm plan calls for a minimum of 5,000 breeders, which should cover 80 percent of the annual requirement for hatching eggs.

About 15 of the producing units are now operating. The total is projected to rise to 75 by the end of this year and to 180 by 1980.

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Although the projections are high, the Ivory Coast is ripe for such development. Along with rising incomes, there is a constantly increasing demand for protein, and the protein gap is widening. Average per capita income in the Ivory Coast was $700 for 1977—by far the highest in West Africa.

However, problems face this new industry. The Ivoirian climate is conducive to numerous poultry diseases. Production units will not be climate-controlled, nor will they be equipped with mechanized feeding, watering, or cleaning equipment.

There are five major categories of diseases found in Ivoirian poultry: Bacterial, viral, parasitic, fungoid, and conditions related to malnutrition.

Of the bacterial diseases, Salmonellosis is considered a major problem, with an alarmingly high incidence. Avian infections, fowl pox, and Newcastle disease are among the major viral maladies. The parasitic diseases—both internal and external—are associated with poor nutrition, indifferent hygiene, overcrowding, and poorly constructed buildings.

The nutritional diseases are spawned in part by high prices for feed, which cause farmers to compound their own rations and commercial feed mixers to cut corners. The main nutritional diseases found in the Ivory Coast are associated with deficiencies in proteins, minerals, and particularly in Vitamins A and D.

The fungal disease most commonly found is aflatoxicosis, which results from the inclusion of contaminated domestic peanutmeal in poultry feed. Although adult chickens are fairly resistant, aflatoxicosis has marked detrimental effects on the growth and progress of young birds and chicks.

Research and vaccine production to control the major diseases has been progressing for the past 2 years at an FAO-sponsored animal pathology laboratory in Bingerville, near Abidjan. Although the laboratory is concerned with all farm animal diseases, much of its efforts are directed against the major poultry diseases.

The United Nations Food and Agriculture Organization proposes to convert the Bingerville laboratory into a poultry disease reference center for all of West Africa during the early 1980's.

The compound feed necessary to support expansion of the Ivory Coast's developing poultry industry will come mainly from domestic production. The country now produces about 250,000 tons of corn and the national 5-year plan calls for 360,000 tons by 1980.

Domestic peanut outturns now supply the major protein supplement, but plans call for the introduction of soybeans, with a production goal of 10,000 tons by 1980 and 100,000 tons by 1985.

The principal poultry breeds used thus far in the project are Shavers Starbro for eggs and Shavers Starcross and Hubbards for broilers. Initial breeding stock has been imported from Shavers Franchise in France. The new breeding stock will be reproducing in a few months.

The present feed conversion ratio for broiler production is about 2.4 pounds of feed for 1 pound live weight, but this ratio can be improved. For layers, feeding requirements are projected at 120 to 160 grams per day.

Most of the 180 new producing units will be located in the heavily populated region around Abidjan. Management will be drawn from local resources, and technical assistance will also come from traveling supervisors associated with the program.

With retail prices for poultry meat at around $2 per pound, eggs at $1.80 per dozen, and demand rising, the chances for the program's success appear to be excellent.

Government support of the program is a large plus factor, judging by the successful advances Government participation has brought to other sectors of Ivoirian agriculture economy such as coffee, cocoa, palm oil, and cotton. □

New FAS Publications

- World Sisal and Abaca Output Forecast Near 1977 Levels (FVF 2-78)
- U.S. Beef Breeding Cattle Exports Down in 1977 (FLM 3-78)
- U.S. Dairy Breeding Cattle Exports Rebound to Near Record Levels (FLM 5-78)
- Exports of U.S. Breeding Swine Dip in 1977 (FLM 6-78)
- U.S. Seed Exports, 1976/77 and 1977/78 (FFVS 2-78).

Single copies may be obtained free from the Foreign Agricultural Service, USDA, Washington, D.C. 20250, Rm. 5918S. Tel. (202) 447-7937.

Government Incentives Spur Increased Brazilian Soybean Product Exports

By Edmond Missiaen

Brazil's rapid surge in soybean meal and oil exports in the past few years is largely the result of Government incentives that favor exports of processed products and of Brazil's spectacular expansion in soybean crushing capacity.

Brazil's export earnings from soybeans and products were over $2.1 billion in 1977, more than double the amount earned in either 1973 or 1974. Most of this growth has been the result of increased shipments of soybean meal and oil.

Brazilian efficiency in exporting soybeans and products is also expected to improve as new transport, storage, and handling facilities continue to be built.

During calendar 1977, the United States greatly outdistanced Brazil in the volume of unprocessed soybean exports, but the two countries' shipments of soybean meal and oil were not far apart.

The United States exported 16.2 million metric tons of soybeans, compared with Brazil's 2.6 million tons. However, Brazil surpassed the United States in soybean meal exports, shipping 5.3 million tons compared with U.S. shipments of 4.2 million. U.S. soybean oil exports in calendar 1977 were 774,000 tons; those of Brazil were 500,000 tons.

Brazil's exports of unprocessed soybeans reached their peak in the 1975/76 marketing year (April-March) when 3.5 million tons were exported. Exports were less than 2.7 million tons in 1977/78, and in 1978/79 (March-February)—owing to drought-reduced production and increased crushing capacity—exports are likely to be 700,000-800,000 tons.

In the meantime, meal exports have increased from 1.4 million tons in 1973/74 to over 5 million tons in 1977/78, and oil exports increased from 80,000 tons to 560,000 tons. Because of this season's short crop, export availabilities of meal and oil will be—at most—5.25 million tons, and 480,000 tons, respectively.

Because of the short supplies, a small quantity of soybeans is likely to be imported this year; at most, total imports could reach 200,000 tons. There is also a possibility of some soybean oil imports.

Despite the impressive growth in the relative importance of soybean meal and oil exports, Brazil is expected to stay in the business of exporting soybeans because of pressures from some of its overseas customers, many of whom have oilseed crushing industries to support. Also, Brazilian farmers would like to keep their marketing options as wide as possible.

Brazil's internal tax structure and program of incentives for the export of processed products have favored the country's growing dependence on exports of processed versus unprocessed soybeans. The Brazilian value-added tax (ICM) on exported soybeans is 13 percent, compared with 9.6 percent for soybean meal (rising to 11.1 percent on November 1) and zero for soybean oil.

Brazilian firms are eligible to receive subsidized credit to finance the output of a portion of soybean meal and oil produced for export. This credit is available for up to 360 days at an annual interest rate of 8 percent. Commercial interest rates vary, but are usually in excess of 40 percent per year.

Under these terms, an amount equal to 20 percent of the previous year's exports plus 20 percent of the previous year's increment in exports over the preceeding year's can be financed. In addition, earnings from the export of soybean oil are not subject to Brazil's 30 percent corporate income tax.

These incentives are now much less than they once were. Until November 1977, the value-added tax on soybean meal was only 5 percent. European Community (EC) soybean crushers, however, complained about this discrimination in favor of soybean meal exports over soybean exports.

As a result, an agreement between the EC and the Brazilian Government was negotiated in which Brazil agreed to increase the value-added tax on soybean meal exports in stages.

In November 1977, the tax was raised to 8 percent; it climbed to 9.6 percent in May 1978; and a final increase to 11.1 percent is scheduled for November 1978. This will leave the tax on soybean meal only 1.9 percentage points below the 13 percent tax on soybean exports.

The rapid growth in Brazil's crushing capacity is another important factor behind the emphasis on exporting soybean meal and oil. Total annual soybean crushing capacity has increased from about 2 million tons in 1971 to around 12 million tons during the current season. Total capacity during the 1979/80 season should be close to 15 million tons.

A few years ago, most of the crushing capacity in Brazil comprised small mills with less than 600 tons daily capacity. These smaller units have relatively high operating costs. This year, however, about one-half of total soybean crushing capacity consists of plants with 1,000 tons per day or more of capacity. These larger, more efficient crushing plants will tend to account for an even larger share of total capacity in the coming years.

A little over half of Brazil's total soybean crushing capacity is owned by private Brazilian firms. Another one-third of capacity is controlled by multinational firms and the remainder is owned by Brazilian farmer cooperatives.

The growth in domestic demand for soybean products in Brazil has been even more spectacular than the growth in exports. Brazil-

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ian soybean meal consumption grew from less than 300,000 tons per year in 1970 to an anticipated 1.25 million tons this season. Internal consumption of soybean oil climbed from 200,000 tons annually in 1970 to around 1.0 million tons in 1978.

Growth rates may be somewhat less dramatic over the next few years, particularly for soybean oil as there is little room left for soybean oil to substitute for other fats and oils. Nevertheless, internal demand will continue to increase at a rapid pace.

In recent years, domestic requirements have absorbed about 65 percent of Brazil's soybean oil availabilities and 20 percent of meal supplies.

The Brazilian Government controls the export flow of soybeans and products through a system of quotas.

Quotas for exports of soybeans, meal, and oil are designed to assure adequate supplies for the rapidly growing domestic market. The Government often imposes price ceilings on meal and oil sold on this market.

The quota for soybean exports is allocated among grain trading companies and cooperatives. The cooperatives, most of which sell soybeans f.o.b. Brazilian ports, control about two-thirds of soybean exports. Crushing companies, including those controlled by cooperatives, account for most of the meal and oil exports, but are not allowed to export soybeans.

Over the past 2-3 years, the Government-controlled trading companies, Interbrás and COBEC, have been handling a growing share of soybean, meal, and oil exports. These companies sometimes work out barter arrangements for Brazilian soybeans such as the 1977 deal with the Mexican food agency, CONASUPO, in which 50,000 tons of Brazilian soybeans were exchanged for an equal quantity of Mexican edible beans.

Most of Brazil's soybean export trade, however, is done on straight commercial terms and is expected to remain that way.

Western Europe is by far the largest market area for Brazilian soybean and soybean meal exports. However, Western Europe, particularly the nine countries of the EC, has been taking a declining share and a declining real volume of Brazil's soybean exports. In compensation, the Soviet Union has been a major market since 1975.

In 1977, the People's Republic of China (PRC) also emerged as a large customer. The most important single-country markets for Brazilian soybeans are Spain, the USSR, and the Netherlands.

Over the past several years, the EC has maintained its position as the largest market for Brazilian soybean meal exports, followed by Eastern Europe (excluding the USSR). The share of Brazil's soybean meal exports going to these two market regions has remained fairly stable over the past 5 years, but the actual quantities going to each region have grown sharply.

The largest individual country markets for soybean meal are the Netherlands and West Germany.

As is the case for U.S. exports, the developing countries of the world form the greatest market for Brazilian soybean oil exports. India and Iran are the largest, but the PRC, Morocco, Pakistan, and several Latin American countries are also important destinations.

With the exception of Japan and other Far Eastern countries, Brazil's export markets for soybeans and products are similar to U.S. markets. The relative unimportance of the Far East is the result of higher cost of shipping from Brazil to that area.

The competitive position of Brazilian soybean producers is improving as the country's generally inadequate transport, storage, and handling facilities are improved. Interior storage and drying facilities have been going up at a rapid pace. Producer cooperatives are able to receive financing on generous terms from the Government for construction.

The result is that the soybean crop currently moves rapidly, with minimal delays, from the field to adequate storage facilities. The

Brazil: Soybean and Products Exports, 1973–77

Item and destination	1973		1974		1975		1976		1977	
	Volume	Share of exports	Volume	Share of exports	Volume	Share of exports	Volume	Share of exports	Volume	Share of exports
	1,000 MT	*Percent*	*1,000 MT*	*Percent*	*1,000 MT*	*Percent*	*1,000 MT*	*Percent*	*1,000 MT*	*Percent*
Soybeans:										
European Community	1,363	76	2,253	83	2,121	64	1,436	39	930	36
Other Western Europe	33	2	356	13	665	20	572	16	625	24
USSR	0	0	0	0	438	13	1,162	32	552	21
People's Republic of China	0	0	0	0	32	1	25	1	309	12
Other	390	22	121	4	77	2	444	12	171	7
Soybean meal:										
European Community	794	51	1,145	57	1,752	56	2,487	57	3,112	58
Other Western Europe	331	21	118	6	214	7	308	7	309	6
Eastern Europe[1] ..	366	23	626	31	1,014	33	1,089	25	1,230	23
Other	71	5	131	6	139	4	472	11	678	13
Soybean oil:										
Western Europe ..	33	54	2	100	10	3	7	2	14	3
India	6	10	0	0	1	0	56	12	181	37
Iran	12	20	0	0	86	33	185	41	115	24
Latin America and Caribbean .	10	16	0	0	36	14	82	18	61	13
People's Republic of China	0	0	0	0	10	4	6	1	73	15
Other	0	0	0	0	120	46	117	26	43	8

[1] Excluding USSR. Source: Bank of Brazil/CACEX.

long lines of trucks in front of cooperative and private receiving areas during harvesttime move through and unload relatively quickly. New paved highways lower the cost of moving soybeans from the interior to port or mill.

Brazil is still heavily dependent upon truck transport for moving soybeans and products. In 1977, 63 percent of all soybeans and 55 percent of all meal and pellets arriving at ports were truck transported. Truck transport is increasing in efficiency as Brazilian truckers switch from 15-ton capacity to 30-ton vehicles.

Rail transport accounted for 26 percent of soybean shipments and 37 percent of meal and pellets arriving at Brazilian ports.

The ports of Rio Grande and Porto Alegre are the only ones able to receive barge traffic. River transport is not possible to the north of Porto Alegre because the coastal mountain range impedes the flow of rivers. Low cost barge traffic is, however, increasing in importance at the port of Rio Grande.

In 1977, 19 percent of all soybeans and 24 percent of meal and pellets arriving at that port came by barge, compared with 9 and 7 percent, respectively, in 1976.

The biggest improvements at ports have been storage and loading facilities built by cooperatives, mostly with Government financing. The facility in the port of Rio Grande, said to be the largest in Latin America, has a total storage capacity of 220,000 tons, and is able to receive 1,500 tons of grain per hour and discharge 2,000 tons per hour to ships.

The Paranagua facility can store up to 120,000 tons, receive 1,000 tons, and load 1,500 per hour. □

USSR 1978 Cotton Prospects: 'Very Good' to 'Excellent'

Current conditions in the USSR cotton belt point to a very good to excellent cotton crop in progress.

Although early-season weather difficulties necessitated replanting over 1 million hectares of cotton and caused some doubts on the final size of this year's crop, timely replanting, increased fertilizer application, replenished irrigation water supplies, and greatly improved weather conditions have offset these doubts to a large extent.

The two major cotton-growing Republics, Uzbekistan and Turkmenistan, have recently boosted cotton output goals, although the harvest in Uzbekistan will be a week to 10 days later than normal.

Prior to the upward revision of cotton output goals in these Republics, the total USSR cotton goal this year called for 8.6 million metric tons of seed cotton. The revised goal now calls for a crop about equal to the record 1977 output of 8.76 million tons of seed cotton, equivalent to 12.7 million bales of lint.

In most previous years, the original goals set by the cotton-growing republics have been exceeded, with the exception of 1975 and 1976. In 1975, prolonged hot winds and dry conditions during the growing season, and early cold weather with frost and rain in late season resulted in a less-than-goal output. Also, in 1976, earlier-than-usual fall weather contributed to some reduction of an otherwise excellent crop.

It should be noted that the sum of the individual republic goals is always larger than the USSR National plan, which has always been exceeded by production in recent years.

Continuing favorable weather during the harvest period could enable Soviet cotton farmers to harvest a crop possibly exceeding the 8.7-million-ton goal.

However, an early fall with frost and rain, as in 1975 and 1976, could reduce current optimistic prospects somewhat—especially in those areas where late replantings would be more vulnerable to earlier-than-usual inclement fall weather.—*Angel Byrne, ESCS.* □

Thailand Aims for Higher Sugar Yields

Thailand, one of the world's five leading sugar exporting countries, is striving to improve its sugar yields from the relatively low level of 75-85 kilograms per metric ton of cane and thus maintain a favorable rate of return despite the export quota limitations of the new International Sugar Agreement (ISA).

Thailand is a relative newcomer to the ranks of leading world sugar exporters. Annual sugar export volume has been boosted from less than 100,000 tons as recently as 1970 to 1.7 million tons during calendar 1977.

No significant sugar surplus problems are anticipated for the 1977/78 marketing year, even though Thailand's current ISA export quota (1.020 million tons) is approximately 700,000 tons below the export total for calendar 1977.

Drought conditions have reduced the size of the 1977/78 cane crop, and total raw sugar output was down 15-20 percent from the 1976/77 level of 2.3 million tons. Domestic consumption is expected to account for 550,000-600,000 tons. If exports reach the authorized 1-million-ton figure, only a small supply of sugar will be available for stockbuilding.

As Thailand's basic sugar export quota is decreased to the extent that the world price remains below 15 cents per pound, the Thai industry hopes that world prices will firm and that exports of up to 100 percent of the quota will be possible.

Under the provisions of the new ISA, Thailand must maintain stocks equal to 8.15 percent of the total reserve supply of 2.5 million tons, which is to be built up over a 3-year period if the world price remains below 19 cents per pound.

On this basis, Thailand's total contribution to the international stockpile would be 203,750 tons—81,500 tons each during the first and second year, and 40,750 tons during the third year.

With a minimum price of 11 cents per pound envisioned under the new ISA, Thai mills agreed to pay growers a price equal to $15 per ton for the 1977/78 crop—the same price for the past two crops. □

By Panida Ratanapanachote, Office of U.S. Agricultural Attaché, Bangkok.

Tradition, Technology Combine To Advance Italy's Pasta Industry

By Lloyd J. Fleck and Alberto Cacciaguerra

Although tradition holds that Italy's Marco Polo brought back the art of spaghettimaking from China, pasta products actually have been made in Italy since before the rise of Rome. There is evidence that the forebears of the Romans knew how to grind hard wheat—the predominant type of the Mediterranean Basin—into semolina.

The Romans apparently learned how to make pasta from their Latin neighbors. Cicero, in 30 B.C., described a pasta dish in his writing, and Apicius, the Roman gourmet, included a pasta dish in his treatise on the culinary arts. While little is known about pasta making after the fall of Rome, it obviously endured, since it re-emerged in the 1200's still going strong.

With the increased trade of the Renaissance, pasta expanded its popularity further north, reaching from the wheat fields of Sicily and Puglia to the hills of Tuscany and the Po Valley.

Commercial production began in the 1300's, when guilds of pastamakers were organized in major Italian cities. Since pasta was dried outdoors, the sunny areas of central and southern Italy soon became the major production areas—especially Rome, Naples, and Palermo.

Techniques of pastamaking evolved only slowly from the Renaissance to the 19th century. With the development of steam power, manpower was replaced as the principal source of energy needed to drive the presses that forced wet dough through forms to make pasta.

With the introduction of artificial drying in the early 20th century, pasta production spread northward into the more humid—but more industrialized—areas of the country.

Production became even more industrialized in 1933 with the introduction of continuous pressure systems, which allowed a constant output of pasta to flow from production lines.

Since the 1930's, the pasta industry's production capacity has continued to grow. In 1937, the industrial census estimated total production capacity at 1.25 million tons per year. Despite damage during World War II, by the mid-1950's capacity had risen to about 1.7 million tons, and by 1976 to 2.22 million tons.

The continued expansion of the pasta industry is perhaps surprising, since most developed countries have seen a gradual reduction in production and demand for wheat-based products. For example, in the United States per capita consumption of wheat products dropped nearly 50 percent between 1911-15 and 1971-75—from 96 kilograms to 50 kilograms per capita.

During the same periods, wheat product consumption in Italy increased by about 20 percent—from 107 kilograms to 127 kilograms per capita—the highest level in Western Europe and quite possibly the world.

There are several reasons for the continued strong demand for wheat products in Italy. First, pasta consumption—which makes up about a third of total per capita wheat consumption—has expanded in the northern parts of the country, partially replacing rice in the Piedmont region and polenta (cornmeal) in the Veneto region.

Second, while meat consumption has grown rapidly since World War II, it is still relatively low compared with the countries of Northern Europe and North America.

Third, Italians have well-established food consumption patterns and do not change them readily.

Brand promotions also have helped keep pasta consumption at high levels. In addition, aggressive nationwide brand promotion campaigns have enabled the larger pasta companies to increase their marketing shares, especially during the past three decades.

Larger marketing shares for the major companies have had two primary effects on the pasta industry—the number of companies in the industry has been dropping steadily and seems likely to continue to do so, and the optimum size of pasta plants has grown steadily (but may have reached a maximum during the past few years).

Both trends are reflected in statistics on plant numbers and size. While production capacity has grown, the number of plants has declined as the industry developed larger, more mechanized plants.

In 1954, there were more than 1,300 plants and production capacity averaged just over 6 tons per day. By 1966, the number of plants dropped to 653, while plant capacity had expanded to nearly 12 tons per day.

In 1976, the number of plants had fallen further to only 305, while average capacity had more than doubled to almost 30 tons per day.

Yet even these figures are misleading, since only 76 plants accounted for the bulk of production capacity. These 76 plants averaged a daily capacity of almost 90 tons, and the largest plant has a capacity nearly 10 times this amount.

The trend toward fewer, larger plants has been accompanied by a shift of production capacity northward toward the more densely populated, industrialized part of the country.

In the mid-1950's, northern Italy accounted for roughly a third of production capacity, southern Italy a third, while the remaining third was split between central Italy and the islands of Sicily and Sardinia.

In the mid-1970's, however, the north accounted for 40 percent, the south continued to hold a third, but the share of central Italy and the islands had dropped to just over one-fourth.

The major gainer was the Emilia Romagna region, which now contains one-fifth of the country's total capacity. Emilia's rise to dominance reflects its strategic position between the Durum wheat growing areas of the south and the

Mr. Fleck is Assistant U.S. Agricultural Attaché in Rome; Mr. Cacciaguerra is Agricultural Specialist in the Attaché's office there.

population centers of the north. In addition, Emilia has a long tradition of food processing and is world-famous for its Parma hams and cheese as well as bologna and other salamis.

Emilia contains the largest pasta plant in the country—the Barilla Company's factory near Parma, which includes 14 automatic lines that have a production capacity of about 845 tons per day (24-hour operation).

This huge production capacity can provide pasta for about 6 million people—enough to make a single strand of spaghetti equal to 2.5 times the world's circumference. Yet this plant has a labor force of only a few hundred workers.

The cost-cutting features of such large automated plants have sharpened competition among pasta manufacturers. Since the price of Durum wheat is controlled by the Italian Government and the price of pasta is controlled by regional price boards, manufacturers are sometimes hard pressed to maintain profitability within this manipulated margin.

During the past year, for example, many pastamakers have complained that rising wheat prices lowered this margin below production costs. Some threatened to raise prices illegally; others to cease production. Although pasta prices were subsequently increased, the price pressures obviously favor producers who have trimmed processing costs to a minimum.

Italy Imports U.S. Durum

Italy's Durum wheat imports during 1974/75-1977/78 averaged about 800,000 tons a year—about a fourth of which came from the United States. Imports of U.S. Durum in 1977/78 were an estimated 243,000 tons, compared with 112,600 tons in 1976/77, 132,100 tons in 1975/76, and 372,100 tons in 1974/75.

Although the prepared food industry in Italy is not as well developed as in Northern Europe — again, Italian eating habits have been slow to change—there has been slow growth, and the diversified pasta firms are in a good position to expand with this market.

There are 1,200 industrial-type mills in Italy and about 2,000 family-type operations. Many of these are dual-purpose mills, which can handle both soft (bread) wheats and Durum.

There are about 70 semolina plants in Italy, and about 45 of them have a milling capacity of more than 100 tons per day—far above the industry average. Some of these plants are owned by pasta manufacturers and most of the others produce semolina under contract from pasta companies.

The gradual integration of pasta manufacturers and semolina millers may help reduce a point of conflict between the two groups—the specifications for wheat. Italian millers have long preferred wheat with low dockage and moisture, which permits high milling rates and good returns.

On the other hand, pasta makers favor wheat with a high gluten content and the yellow color preferred by consumers. Usually, there is a compromise between preferences.

Pasta manufacturers often create a blend of wheats so that the characteristics of the year's domestic wheat can be balanced with the qualities of various imported wheats. For example, U.S. Durum is often blended to add yellow color to pasta, even though its gluten content is usually lower than Italian Durum.

The trend toward specialized semolina mills is also encouraged by a 1967 law requiring Italy's pastamakers to use only semolina from Durum wheat. Although the law was ostensibly designed to protect consumers from inferior pasta (and to guarantee a market for Durum wheat producers), some critics in the milling and pasta industries have argued that a minor proportion of soft wheat in pasta does not harm its quality. Furthermore, about 3 percent of Durum wheat kernels have the floury characteristics of soft wheat—thus making a pure Durum semolina impossible.

During the first two decades of this century, Italy's pasta exports averaged about 36,000 tons per year—the bulk of which went to Italian immigrant populations in North America. During the 1920's and 1930's, however, exports averaged only about 14,000 tons per year, reflecting development of pasta manufacturing in the United States.

Markets were further curbed during the 1940's, as Italian manufacturers lost their markets in Italy's former colonies. Pasta exports rebounded during the 1950's and 1960's, however, as exporters found new markets in the European Community.

In 1977, Italy's total pasta exports exceeded 150,000 tons, valued at about $84 million, with about 75 percent going to EC destinations. Other markets have been established in Africa, East Europe, and Asia. □

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Fifty-Man Japanese Team Visits U.S.

A Japanese trade mission, consisting of more than 50 members, will hold talks with food company representatives and view exhibits in five key U.S. trading cities during its stay in the United States between October 15 and 29.

The team, made up of key executives of Japan's leading supermarkets, department stores, wholesale firms, and trading companies, will in turn brief the U.S. trade by giving in each of the five cities a seminar dealing with Japan's food-safety and customs regulations.

The cities in which the exhibits and seminars are being held, and their dates, are: San Francisco, October 15-16; Portland, October 17-18; Chicago, October 19-21; New York, October 22-24; and New Orleans, October 25-28.

In addition to FAS, sponsors of the exhibits are the Washington and Oregon Departments of Agriculture, the Mid-America International Agri-Trade Council (MIATCO), Eastern U.S. Agricultural and Food Export Council, Inc. (EUSAFEC), and the Southern United States Trade Association (SUSTA).

In each of these cities, the team will be exposed to a full line of U.S. food products. These will include dry, frozen, chilled, dehydrated, and canned items in consumer and institutional packs. Included in the exhibits will be foods for inclusion in gift sets, cheeses, salad oils, dried fruits, and various types of poultry packs, as well as many other products.

Japan was the leading market for U.S. agricultural products in calendar 1977, with U.S. exports to Japan setting a record at $3.86 billion versus $3.56 billion in 1976 and $3.08 billion in 1975.

Consumer food products of the type in which the Japanese team is interested accounted for about 11 percent of the 1977 export total, or $395 million. Among U.S. foods exported to Japan in 1977, were: Meat and meat products, $126 million; variety meats, $25 million; fresh fruit, $89 million; nuts, $27 million; poultry and poultry products, $37 million; dried fruit, $10 million; and other grocery items, $27.6 million. □

Brahmans Draw World Buyers

Potential buyers from as far away as the Dominican Republic, Guatemala, Colombia, Argentina, Mexico, and South Africa will be on hand for the second Invitational Herd Bull and Female Sale at Houston, Texas, November 11. Top-quality U.S. Brahman bulls and females will be displayed for sale at one of the city's top hotels.

The bulls will be shown in the hotel's ballroom in conjunction with the Brahman Clinic V, sponsored by "J" custom fitters, November 8-11.

Mexico and Canada were Nos. 1 and 2 in importance in 1977 as buyers of U.S. beef breeding cattle. They bought 2,200 head and nearly 1,600 head, respectively, 115 of which were Brahman cattle. Argentina was the third most important market for U.S. beef breeding cattle, taking nearly 1,500 head, over two-thirds of them Brahman.

In 1977, a total of 2,545 Brahman cattle were inspected for export, a 5 percent increase from the 2,410 head in 1976.

Mexico, Canada, and South Africa have traditionally accounted for about three-fourths of all U.S. beef breeding cattle exports. In the peak year of 1974, these three markets took more than 31,000 head, or nearly 80 percent of U.S. exports. These same three countries, because of their import restrictions on cattle, took only about 3,800 head in 1977, or less than 50 percent of U.S. total exports. □

(Continued from page 5)

Japanese Market

it, the Attaché's Office can make the necessary appointments. It can also provide, on a cost basis, limited secretarial assistance, translator service, address lists, and data about potential market strengths and weaknesses.

"The Attaché's Office is particularly interested in aiding small and medium-size processors since there seems to be a strong market potential for many of their products," Holloway said. "With the opening in Tokyo of a new Agricultural Trade Office, hopefully to take place in the near future, FAS will be able to strengthen its services." □